

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): Apparatus for plasma treating a substrate comprising : ~~[[-]]~~ a chamber within which ~~one or more gases~~ at least one gas are caused to flow ;

a plasma generator for causing the at least one gas ~~(es)~~ within the chamber to form a plasma, thereby generating at least one species; and
a guide for directing the gas flow containing the species towards the substrate; wherein the apparatus is arranged such that the width of the plasma in use is greater than that of the substrate, the difference between the widths defining an outer region of plasma, and wherein the guide is adapted to direct species from substantially all of the outer region, towards the substrate.

Claim 2 (Original): Apparatus according to claim 1, wherein the guide is adapted to direct towards the substrate at least the species generated substantially at or adjacent the periphery of the plasma.

Claim 3 (Currently Amended): Apparatus according claim 1 ~~or claim 2~~, further comprising a deflector device within the chamber for directing the at least one gas ~~(es)~~ introduced into the chamber towards ~~the~~ at least one most active region ~~(s)~~ of the plasma.

Claim 4 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein at least part of the guide is substantially curved in section.

Claim 5 (Currently Amended): Apparatus according to any of claims 1 ~~to 3~~, wherein the guide is substantially linear in section.

Claim 6 (Original): Apparatus according to claim 5, wherein the guide is substantially a hollow conical frustum.

Claim 7 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the guide is adapted to cause a net[[t]] flow of species across the substrate.

Claim 8 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the guide is adapted to shield the substrate from electromagnetic radiation originating from the plasma.

Claim 9 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the guide further comprises a plasma termination device so as to attenuate the supply of electrically charged species to the substrate.

Claim 10 (Currently Amended): Apparatus according to claim 9, wherein the plasma termination device is an electrically conducting mesh.

Claim 11 (Original): Apparatus according to claim 10, further comprising an electrical power supply for powering the electrically conducting mesh.

Claim 12 (Original): Apparatus according to claim 9, wherein the plasma termination device is a magnet.

Claim 13 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the material comprising at least the surface of the guide for contacting the gas flow, is arranged to prevent the quenching of active species within the gas flow.

Claim 14 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, further comprising a heating system arranged to heat the guide to a predetermined temperature when in use.

Claim 15 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the guide is detachable.

Claim 16 (Currently Amended): Apparatus according to ~~any of claim~~[[s]] 1 ~~to~~ 14, wherein the guide is formed from the chamber walls.

Claim 17 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the plasma generator comprises at least one plasma generator selected from the group of plasma generators consisting of an induction coupled plasma generator, a microwave plasma generator ~~or~~ and an electrode plasma generator.

Claim 18 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, further comprising a support for supporting the substrate.

Claim 19 (Original): Apparatus according to claim 18, wherein the support is located within the chamber.

Claim 20 (Currently Amended): Apparatus according to claim 18 ~~or claim 19~~, wherein the support is moveable so as to provide a variable distance between the plasma and the substrate.

Claim 21 (Currently Amended): Apparatus according to ~~any of claim~~[[s]] 18 ~~to~~ 20, wherein the guide is mounted to the support.

Claim 22 (Currently Amended): Apparatus according to ~~any of claim~~[[s]] 18 to 21, further comprising an electrical supply system adapted to supply electrical power to the support.

Claim 23 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the guide is arranged to have an external dimension just less than that of the chamber such that, during use the guide undergoes thermal expansion and comes into thermal contact with the chamber.

Claim 24 (Currently Amended): Apparatus according to claim 1 ~~any of the preceding claims~~, wherein the guide further comprises an underside surface arranged to recompress the plasma as it flows substantially radially in a region adjacent the edge of the substrate.

Claim 25 (Currently Amended): A method for plasma treating a substrate comprising:- causing ~~one or more gases~~ at least one to flow within a chamber; forming a plasma from the at least one gas ~~(es)~~ within the chamber using a plasma generator, thereby generating at least one species; and directing the gas flow containing the species towards the substrate; wherein the width of the plasma in use is greater than that of the substrate, the difference between the widths defining an outer region of plasma, and wherein the species are directed from substantially all of the outer region, towards the substrate.

Claim 26 (Original): A method according to claim 25, wherein the plasma is an induction coupled plasma.

Claim 27 (Original): A method according to claim 26, wherein an electrical power is provided to the substrate so as to control the interaction of the species

with the substrate.

Claim 28 (Original): A method according to claim 27, wherein the electrical potential is an RF potential.

Claim 29 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 28~~, wherein the gas pressure within the chamber is in the range 1 to 15 Pa.

Claim 30 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 29~~, wherein the at least one gas (es) comprise at least one gas selected from the group of gases consisting one or more of SF₆, chlorine, fluorocarbon compounds, nitrogen, oxygen, or silane and combinations thereof.

Claim 31 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 30~~, wherein the power input of the plasma generator is about 5 kW.

Claim 32 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 31~~, wherein the gas flow rate is about 500 standard cubic centimetres per minute.

Claim 33 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 32~~, wherein the plasma treatment comprises an etching treatment.

Claim 34 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 33~~, wherein the plasma treatment comprises a deposition treatment.

Claim 35 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 34~~, wherein at least the species generated substantially at or adjacent the periphery of the plasma are guided onto the substrate.

Claim 36 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 35~~, further comprising directing the at least one gas ~~(es)~~ introduced into the chamber towards the most active region (s) of the plasma.

Claim 37 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 36~~, further comprising causing a net[[t]] flow of the species across the substrate.

Claim 38 (Currently Amended): A method according to ~~any of claim[[s]] 25 to 37~~, using apparatus according to any of claims 1 to 24.